What is claimed is:

[Claim 1] 1. A device (2) for monitoring a welding area of an object (14) in connection with welding, said device comprising:

means for reproducing (3) the welding area;

at least one filter (4) arranged in front of or in the reproduction means (3);

means for illuminating (5) the welding area with ultraviolet radiation; and

said filter (4) comprising a band-pass filter configured for filtering around a wavelength within the ultraviolet wavelength range.

[Claim 2] 2. The device as recited in claim 1, wherein said filter wavelength is centered around a wavelength at which the illumination means emits rays.

[Claim 3] 3. The device as recited in claim 1, wherein said filter wavelength lies within a wavelength range of 280-450 nm.

[Claim 4] 4. The device as recited in claim 1, wherein said filter wavelength is shorter than 400 nm.

[Claim 5] 5. The device as recited in claim 1, wherein said filter wavelength is shorter than 380 nm.

[Claim 6] 6. The device as recited in claim 1, wherein said filter wavelength is longer than 300 nm.

[Claim 7] 7. The device as recited in claim 1, wherein said filter wavelength is approximately 365 nm.

[Claim 8] 8. The device as recited in claim 1, wherein said filter wavelength is approximately 320 nm.

[Claim 9] 9. The device as recited in claim 1, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 90 nm FWHM around said filter wavelength.

[Claim 10] 10. The device as recited in claim 1, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 70 nm FWHM around said filter wavelength.

[Claim 11] 11. The device as recited in claim 1, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 30 nm FWHM around said filter wavelength.

[Claim 12] 12. The device as recited in claim 1, wherein said band-pass filter (4) is adapted for filtering within a range which is approximately 10 nm FWHM around said filter wavelength.

[Claim 13] 13. The device as recited in claim 1, wherein said reproduction means (3) comprises a camera.

[Claim 14] 14. The device as recited in claim 13, wherein said device further comprises a diaphragm (16) arranged in front of the camera.

[Claim 15] 15. The device as recited in claim 13, wherein said device comprises an attenuating filter.

[Claim 16] 16. The device as recited in claim 14, wherein said diaphragm (16) has a relatively small aperture means 9 for processing an image produced by the camera 3, which means 9 comprises a central processing unit (CPU), or computer.

[Claim 17] 17. An arrangement (1) for controlling a welding operation, said arrangement comprising:

a device (2) for monitoring a welding area of an object (14) in connection with welding, said device comprising: means for reproducing (3) the welding area; at least one filter (4) arranged in front of or in the reproduction means (3); means for illuminating (5) the welding area with ultraviolet radiation; and said filter (4) comprising a band-pass filter configured for filtering around a wavelength within the ultraviolet wavelength range;

means (9) for processing an image produced by the reproduction means (3); and

means (10) for controlling one of: at least one welding parameter and the position of the welding head (11) of the welding means (7) on the basis of information from the image.

[Claim 18] 18. The arrangement as recited in claim 17, wherein said image-processing means (9) is adapted to measure the weld width from the image.

[Claim 19] 19. The arrangement as recited in claim 17, wherein said image-processing means (9) is adapted to detect at least one of: the position of the welding joint, a gap between two parts to be welded together, and the geometry of the melt.

[Claim 20] 20. A method for monitoring a welding area of an object (14) in connection with a welding process, said method comprising:

illuminating the welding area with ultraviolet radiation;

reproducing the welding area; and

filtering radiation from the welding area in a direction toward a means (3) for said reproduction, said filtering being carried out using a band-pass filter (4) around a wavelength within the ultraviolet wavelength range.

[Claim 21] 21. The method as recited in claim 20, wherein said wavelength lies within a wavelength range of 280-450 nm.

[Claim 22] 22. The method as recited in claim 20, wherein said wavelength is shorter than 400 nm.

[Claim 23] 23. The method as recited in claim 20, wherein said wavelength is shorter than 380 nm.

[Claim 24] 24. The method as recited in claim 20, wherein said wavelength is longer than 300 nm.

[Claim 25] 25. The method as recited in claim 20, wherein said wavelength is approximately 365 nm.

[Claim 26] 26. The method as recited in claim 20, wherein said wavelength is approximately 320 nm.

[Claim 27] 27. The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 90 nm FWHM around said wavelength.

[Claim 28] 28. The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 70 nm FWHM around said wavelength.

[Claim 29] 29. The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 30 nm FWHM around said wavelength.

[Claim 30] 30. The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is approximately 10 nm FWHM.

[Claim 31] 31. The method as recited in claim 20, further comprising:

processing an image produced by the reproduction means (3); and

controlling at least one of welding parameters and the position of a welding head (11) based on information processed from the image.

[Claim 32] 32. The method as recited in claim 31, wherein the width of the welding joint reproduced is measured, and said welding parameters and position of the welding head (11) are controlled on the basis of the measured weld width.

[Claim 33] 33. The method as recited in claim 32, wherein the measured weld width is compared with one or more reference values, and, in the event of deviation from an approved range being detected, said welding parameters and position of the welding head (11) are regulated.

[Claim 34] 34. The method as recited in claim 31, wherein the position of the welding joint and a gap between two parts to be welded together and the geometry of the melt are detected, and said welding parameters and position of the welding head are controlled on the basis of this information.

[Claim 35] 35. A computer program comprising computer program segments that implement a method, when the program is run on a computer, for monitoring a welding area of an object (14) in connection with a welding process, said method comprising: illuminating the welding area with ultraviolet radiation; reproducing the welding area; and filtering radiation from the welding area in a direction toward a means (3) for said reproduction, said filtering being carried out using a band-pass filter (4) around a wavelength within the ultraviolet wavelength range.

[Claim 36] 36. A computer program product comprising computer program segments stored on a computer-readable means that implement a method, when the program is run on a computer, for monitoring a welding area of an object (14) in connection with a welding process, said method comprising: illuminating the welding area with ultraviolet radiation; reproducing the welding area; and filtering radiation from the welding area in a direction toward a means (3) for said reproduction, said filtering being carried out using a band-pass filter (4) around a wavelength within the ultraviolet wavelength range.